Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992	)	ET Docket No. 93-7
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	

REPLY COMMENTS OF CONTINENTAL CABLEVISION, INC.

Robert J. Sachs
Henry James
John Fouhy
CONTINENTAL CABLEVISION, INC.
The Pilot House
Lewis Wharf
Boston, MA 02110
(617) 742-9500

Paul Glist
COLE, RAYWID & BRAVERMAN
1919 Pennsylvania Avenue, N.W.
Suite 200
Washington, D.C. 20006
(202) 659-9750

April 21, 1993

TABLE OF CONTENTS

SUMMARY

If TV receivers were the size of wristwatches or CDs, then consumer electronics manufacturers would be as concerned with theft as cable is with theft of its services. The conditional access technologies recommended by the consumer electronics manufacturers will aggravate cable piracy -- which is already equivalent to about 25% of industry revenue. Broadband descrambling, which EIA and several consumer electronics manufacturers recommend, is not even a commercial product, and in design it relies upon a security measure which present pirate boxes easily defeat. Traps are readily defeated, and create an inflexible architecture which require customers to stay home in order to change services and require operators physically to reconfigure traps at every location to rearrange channels or introduce new services. Interdiction adds an incremental cost of $300-$400 per subscriber, plus increased power consumption and outages. These technologies also fail to accommodate two-way transactional services.

Scrambling is not a perfect solution, but it can be tailored to selected markets where piracy rates require it; is limited to the channels which must be given the greatest protection; and can be periodically upgraded in the dynamic battle against innovations in piracy. A universal scrambling system, particularly one internalized in the TV receiver, cannot be so tailored or upgraded.

Quite apart from accommodating scrambling and transational services, cable converters prolong the life of older TV receivers, allowing even the most rudimentary click-dial set to receive a vastly expanded number of channels; to enjoy superior tuning; to prevent direct pickup interference; and to obtain convenient premium upgrades and impulse pay-per-view ordering capabilities. New features include sophisticated electronic program guides and electronic messaging. That is why Continental's customers continue to demand converters even when systems do not employ scrambling.

In balancing the benefits of scrambling against presumed losses in TV functionalities, the Commission should know that relatively few customers suffer the problems colloquially attributed to converters and converter/descramblers. A recent survey conducted by Walker Research for Continental demonstrates that few customers have TV sets with picture-in-picture features and fewer still experience problems with them. One-fifth report some problem in recording one program while watching another, but such problems are five times more likely to be caused by improper VCR/TV installation and operation than can be attributed to

The proposals by EIA and the manufacturers of consumer electronics are a recipe for their own artificial trade advantage. They do not universally provide the functionalities they claim are essential, and resist any regulatory obligations to do so. Instead, they ask that the cable industry re-engineer its entire plant to meet any feature which one manufacturer happens to place on only one model in only one model year. They also ask for restrictions so that Sony remotes could operate Scientific Atlanta or Zenith boxes, but Scientific Atlanta remotes could not operate Sony equipment.

Specific solutions are to require manufacturers to make all cable-capable receivers compatible with EIA563 (or an upgraded version of the standard), which will lead lower-cost back-of-set descramblers. Consumer electronics manufacturers and

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992	)	ET Docket No. 93-7
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	

REPLY COMMENTS OF CONTINENTAL CABLEVISION, INC.

Continental Cablevision, Inc. submits these Reply Comments on the equipment compatibility inquiry the Commission has commenced in this proceeding.

I. SCRAMBLING MUST BE PRESERVED AS A CONDITIONAL ACCESS OPTION

A. Scrambling Is Necessary To Control Rampant Theft of Service Which Is Driving Up Prices and Jeopardizing Cable Programming

Scrambling is not a conditional access technology adopted merely for the convenience and benefit of the cable industry. Scrambling is employed to reduce cable theft. Theft of service is a problem of massive dimension that affects programmers, cable operators and cable consumers. In 1991 alone, theft of service consumed $5 billion of potential basic and pay television revenues annually--the equivalent of 25% of industry revenue without even accounting for the lost pay-per-view revenues See Attachment 1. Cable customers already pay a "theft" premium,

much as honest citizens pay for tax evaders. In the long run, as with all intellectual property, cable programming must be protected from theft or the programming will not be offered on cable or will be offered only with restrictions on release dates and availability.

B. The Conditional Access Technologies Preferred By Consumer Electronics Manufacturers Cannot Be Economically or Efficiently Applied on A Universal Basis

Consumer electronics manufacturers pay lip service to the need for effective anti-theft measures, but their own business experience and incentives belie a genuine interest in protecting programming. Consumer electronics manufacturers resisted DAT royalties and pushed for unlimited DAT imports. We submit that if TV receivers were the size of wristwatches or CD's, the manufacturers would be as concerned with the problem of theft as cable is concerned with theft of service. In lieu of that experience, they offer solutions that would defeat the security infrastructure which is crucial to protecting cable programming and the future of cable release windows.

(1) Broadband Descrambling

One of their proposed "solutions," broadband descrambling, has three major limitations. First, far from being available for commercial applications, the supposed broadband descrambler is only a breadboard in a vise in a lab. It is not a product. If the consumer electronics manufacturers are confident of broadband descrambling's ability to economically provide security in the field, they should invest in it and market the product in

competition with Scientific Atlanta and Zenith, neither of whom have been able to develop such a product after years of research. Second, assuming that it could be made to work, the price of broadband descrambling is unknown, making cost comparisons with other access techniques impossible. Third, it is a poor security measure: it can only decrypt basic sync suppression, which is a first-generation security measure that present pirate boxes easily defeat, a technology which the cable industry has already surpassed for current security applications.

(2) Traps

Traps offer still worse security features. Negative traps are easily defeated, and because the underlying signal is transmitted "in the clear," both basic and premium services can be tapped into with relative ease. Both positive and negative traps are inflexible: they serve only a one-way (downstream) architecture and require physical service calls to authorize/deauthorize service (thus defeating customer convenience and impulse ordering) and must be physically reconfigured at every location in order to rearrange channels, add product, and make similar changes in service. Traps also introduce signal degradation.

(3) Interdiction

Interdiction is extremely expensive. It must be installed in every home, regardless of the particular channels subscribed to. Although there are potential applications in selected markets, Attachment 2 demonstrates that in real-world deployment,

given the actual subscription levels to cable and to premium services, deploying interdiction would impose an incremental $500 million capital expense on Continental alone, without even accounting for increased power consumption and outages. Like traps, interdiction is a one-way technology preventing consumers from benefiting from two-way transactional services.

C. Scrambling Allows Cable Operators To Tailor Security In Specific Markets And Routinely Upgrade Security To Fight Innovation in Piracy

Continental has never regarded scrambling as a perfect solution to security, and in fact deploys it only on an as needed basis. In those markets where other security measures like traps are adequate due to relatively low levels of theft of service, we use traps. But in markets where scrambling is needed to deter piracy, scrambling is the most cost effective technique, and provides a level of flexibility unmatched by any other conditional access technology.

Anti-piracy measures must be dynamic, for as soon as one technique is deployed, a massive, underground industry, already penetrated by organized crime, devotes significant R&D to cracking the system. Cable then must upgrade its security, moving from sync suppression to video inversion to tri-mode and other dynamic scrambling techniques. At present, an operator may make a discrete judgment that security in a particular market has been compromised, and must be upgraded. The scrambling system can then be inexpensively reconfigured at the headend if necessary and converters reprogrammed, upgraded or replaced. A

universal scrambling system, internalized in the TV receivers, would be impossible to upgrade in any meaningful way. In a nationwide scrambling scheme, by what standard may the industry judge compromised security? For example, even after conversion to VC2 Plus, the home satellite dish (HSD) industry still faces a discrepancy of 3 million more receivers shipped than the 1 million receivers authorized. Must cable operators in every market await the same theft ratio before upgrading security nationwide? And once the decision is made to upgrade, how can an operator access the TV receivers which it does not own to change the security system hardware? And in the meantime, is the operator supposed to transmit in two scrambled formats to accommodate those customers who have not replaced their TV receivers with new receivers internalizing the updated decryption standard? A uniform nationwide scrambling standard, particularly one internalized into TV receivers, will defeat the ability of cable to secure the very product which is the essence of its entertainment service.

II. CABLE CONVERTERS OFFER SIGNIFICANT ADVANTAGES IN PRESERVING AND ENHANCING CONSUMER INVESTMENTS

The Commission should not fall prey to the propaganda that consumer electronics manufacturers are the sole source of innovation, who are being frustrated by cable operators pursuing their parochial interests in signal security. The cable converter has been and continues to be a major source of innovation and benefit to cable consumers. At the most basic

level, the cable converter has extended the life of older TV receivers, permitting even the most rudimentary click-dial set to receive a vastly expanded number of channels; to enjoy remote control and remote volume control; to enjoy superior tuning; to prevent direct pickup interference despite poor receiver shielding; and to obtain convenient premium upgrades (without the customer having to make an appointment) and impulse pay-per-view ordering capabilities. Converters are now available with sophisticated "menu" features, enabling customers to display menus of available programs, and electronic messaging.

Actual consumer demand for converters confirms the real desire of customers to use cable converters to extend the life of TV receivers. Even in systems which do not employ scrambling,

III. ACTUAL SURVEY DATA DEMONSTRATES THAT FEW SUBSCRIBERS ARE ACTUALLY DISADVANTAGED BY SCRAMBLING. FAR MORE ARE CONFUSED BY CONSUMER ELECTRONICS

Congress has solicited a Commission report balancing the benefits of scrambling versus an assumed loss of TV Receiver functionalities. In fashioning its recommendations, the Commission must account for the fact that relatively few of the problems colloquially attributed to cable are actually caused by the cable converter/descrambler. As a result, some relatively prosaic solutions are available, which need not render obsolete the entire embedded base of TV receivers, nor destroy the security infrastructure for cable programming services.

Continental commissioned Walker Research of Indianapolis, Indiana, to survey the extent of and source of problems encountered by a random sample of Continental's 2.9 million customers. See Attachment 3. These customers are using more than 4 million converters and converter/descramblers.

A sample of 571 customers was asked specifically about problems encountered in taping one program while watching another, time-delayed recording, and advanced picture in picture features.

While 17% of our customers reported some type of problem while trying to watch one program and record another, the cause of such problems are five times more likely to be the result of the way the consumer's equipment is hooked up and operated than due to scrambling. We could identify only 10 customers out of a

sample of 571 where scrambling is possibly the cause of a problem watching one program while recording another.[1]

About 5% of our customers have some kind of problem with time delayed recording. However, we could identify none due to scrambling. Consumers themselves told us that their problems were due to their inability to correctly program their VCR's timer (either the timers were difficult to program or the consumer didn't know how to do it). "It's just me not doing the VCR right" and "I just don't know how to do it" were typical verbatim responses.

Only 6.7% of our customers have a TV with picture-in-picture features and only six customers had any problems with this feature. Of these six reported problems, three are definitely not caused by scrambling. The other three problems may be caused by scrambling, but could also be due to other factors.[2]

Continental believes this survey is representative of the industry as a whole, based upon our underlying demographics. If the Commission has any doubt as to its validity, we strongly urge

---

[1]Even in these 10 cases, scrambling cannot be blamed with certainty since some customers reported problems with "scrambling" on cable systems that employ no scrambling. Some customers also reported problems due to "scrambling" for scrambled services which the customer does not receive (to our knowledge).

[2]We asked these three customers to identify which channels they had problems with to ascertain if those channels were in fact scrambled, and none of the customers could associate the problem with any particular channel. While this makes it less likely that scrambling is indeed the cause of the problem, it does not rule it out entirely.

it to conduct its own survey to verify the relatively small number of customers adversely affected by scrambling.

By this data, we do not seek to trivialize the problems customers encounter which are genuinely a product of scrambling. But the Commission must beware of accepting "folk wisdom" that assigns virtually every problem with consumer electronics to the cable industry, merely because customers first call cable for help with such problems (up to 40% of our service calls are for "customer education" and a large portion are directly caused by improper VCR hookup or operation); or because it is politically correct to saddle cable with blame. The Commission must also be cautious in not imposing massive disruption and costs on the overwhelming majority of customers who encounter no problems, merely to benefit the fractional percentage of customers who do.

IV. CONSUMER ELECTRONICS MANUFACTURERS HAVE OFFERED A RECIPE FOR PLANNED OBSOLESCENCE OF RECEIVERS AND VCRS TO THE BENEFIT OF FOREIGN MANUFACTURERS

EIA and the manufacturers of consumer electronics have offered a recipe for planned obsolescence of TV receivers, to the major benefit of foreign manufacturers and with the evisceration of security essential to protect the availability of programming which cable (and TV receiver) customers are trying to obtain.

As explained above, broadband descrambling relies on an old sync suppression scheme which pirate boxes have already defeated. Interdiction imposes massive costs and relies on "in the clear" transmission peculiarly susceptible to theft. Universal, uniform

scrambling schemes present an irresistible target to organized piracy and would be virtually impossible to upgrade. Moreover, unless every customer were required to invest in new TV receivers, cable systems would be required to transmit duplicate signals under two different sets of scrambling codes or lose customers. That alone suggests a recipe for manufacturers to enrich themselves by rendering existing receivers obsolete and requiring massive new purchases.

That recipe is exactly what the consumer electronics manufacturers have submitted in their prescription for reform. The pattern is evident in EIA's prescription for "cable ready" labelling. In essence, EIA suggests that if manufacturers themselves avoid using those words, regardless of ongoing heavy promotion by retail salesmen and display ads of "cable ready" TV's (Attachment 4), then all functionalities of TV receivers [redacted]

responsibility for delivering functionalities, while demanding that cable's entire distribution architecture be reengineered to meet any feature of any TV receiver even if it is produced by one manufacturer for one set in one model year. The consumer electronics manufacturers don't follow their own standards and do not want the Commission to require them to do so. The manufacturers will not commit to building the very functionalities and specifications to which they wish the cable industry to be held. (See EIA at 8 and Mitsubishi at 6.)

Sony presents a similarly lopsided request that the Commission freeze and regulate all cable converter IR codes--but not the IR codes of any TV receivers--so that cable operators could not keep up with receiver manufacturers. They would require Sony's remote controls to operate cable boxes but not assure that Zenith or Scientific Atlanta remote controls also operate Sony equipment. That is a formula for mandating consumer purchases from oligopolistic foreign manufacturers.

In a world of reason, one would not expect a recommendation to Congress that foreign manufacturers be given a codified trade advantage, and the US manufacturers be disabled from competing. Indeed, it would be a rational consumer protection and trade policy to assure compatibility by limiting TV receivers to the display function only, like a computer monitor, and by placing all functionalities into external or replaceable pull out components. That would create a market for US converters and a consumer electronics world in which TV sets could be as easily

and cheaply upgraded as are audio and computer systems are today, that is, by upgrading one component without throwing away the

the cost of an integrated converter/descrambler. This will allow consumers to make the choice of "buying" the conversion/compatibility functionality rather than renting it, while assuring cable the opportunity to customize and upgrade security as needed.

2. Consumer electronics manufacturers and vendors should be required to educate their customers, through customer service telephone numbers, written notices, and other techniques already employed by the cable industry, on the proper installation configuration of home electronics, so that consumers do not inadvertently disable their own functionalities through improper installation. This will complement the ongoing consumer education efforts of the cable industry, which already account for as much as 40% of Continental's service calls.

3. Because most people will not quickly replace all of their TV receivers (the average set is kept for 7 years as a primary set and then retained another 7-8 years in a secondary location), cable operators will continue to offer converters and converter/descramblers. This will avoid the massive consumer costs of planned obsolescence and permit cable to innovate on the functions offered through converters.

4. Because some customers have purchased high-end TV's with picture-in-picture features but without EIA563, cable operators will offer optional premium equipment, including dual output converters (with two descramblers); smart remotes; and time switches. This will assign the costs of such highend features to

those customers who wish to use them, rather than forcing the less affluent customers to subsidize the premium choices of a few.

5. Because underlying much of this "compatibility" problem is theft of service, the Commission should include in its report

Paul Glist
COLE, RAYWID & BRAVERMAN
1919 Pennsylvania Avenue, N.W.
Suite 200
Washington, D.C. 20006
(202) 659-9750

April 21, 1993

ATTACHMENT 1
FEDERAL COMMUNICATIONS COMMISSION
ET Docket No. 93-7

Scrambling is the most effective weapon against theft of cable service.

[redacted]

Omaha W

TUESDAY,

Ager
Firm
Cabl

FBI Say
To Conv

BY IKE
WORLD-H

The FBI seize
converter boxes
ny that were u
buyers to receiv
seals without pa
said Tuesday.

Agents raided
Electronics, at 8
S. 134th St.
Lontor, agent
Nebraska-Iowa
Omaha.

No arrests wer

The converte
altered so the use
channels such
Showtime, the
Movie Channel.

Cable convert
cleared commerc
long as they are
premium chann
customers to s
without paying
along with their

Jim Allen, dire
Theft office at the
sion Association
Omaha seizure w
the Midwest.

Pirated cable s
$30 million a yea
FBI said.

"Unfortunately
along to the cu
companies adjust
for the losses, sai
man for Cox Cabl

Cable compani
for premium chan
regular cable serv
example, charges
basic service and
a premium chan
additional premi
said.

The signals for
are scrambled in
those who do not
getting it.

A telephone ca
was returned by
United Imports.
firm is a nationa
and a subsidiary
S. 72nd St.

The FBI also se
bank account of C
a company associ
tronics. Lontor sai

WARFIELDS BUSINESS RECORD
BALTIMORE 1/14/93

MEDIA

Ship Ahoy! HBO Fires Broadside At Alleged Cable-TV Buccaneers

Five Baltimore Area Bars Named in Federal Court Suit As Part of Crackdown on Alleged Cable-TV Signal Thieves

By J.B. Pierpoint
WJH Business Writer

The cable industry's nationwide battle against high-flying cable buccaneers who use elaborate satellite dishes and electronic decoders to pirate broadcasts has spilled over into Baltimore.

The Home Box Office cable channel last week filed suit against five Baltimore area bars that allegedly used illegal means to pick up the feed of a recent prize fight.

The cable company, which claims the bars and restaurants used satellite dishes and decoders to tap into its signal, is seeking $350,000 in damages from each of the establishments for alleged copyright infringement.

But bar owners contacted owner, who asked not to be named because of the pending lawsuit.

National crackdown

The local legal dispute is part of a national crack-down by HBO, which restricts its sports and movie programming to residential cable subscribers.

"Our service is restricted to home viewing," says Dana Pescosolido, a partner in the Baltimore firm Fairbanks, Gault and Pescosolido. "Guest hotel rooms are the only exception."

"We subscribe through our satellite system. Ours is legal," counters Chris Amato, manager of Balls — The All American Sports Bar downtown.

Bill Sapp, owner of Danny's Belair House, says he bought a

The company, which uses a post-office box for collecting bills, is not listed in Tulsa telephone directories, and could not be reached for comment.

Piracy pervasive

In the suit, filed in U.S. District Court for Baltimore, HBO claims the area bars pirated its broadcast of the recent Razor Ruddock vs. Lennox Lewis prize fight, which was aired Halloween night along with the Moldrick Taylor vs. Crisanto Espana fight.

Cable security officials with HBO, a subsidiary of Time Warner Entertainment Co. L.P., did not return calls seeking comment.

According to industry officials, pirating nationwide costs cable companies and programmers an estimated

HBO

Continued from page 13

across the country to document alleged piracy.

During the Stanley Cup hockey playoffs last year, Sports Channel Chicago investigators visited more than 900 bars. They eventually filed suit against 68 that were allegedly pirating broadcasts of the Black Hawks games.

Most of the Chicago bars are settling out of court. Another 34 bars reached agreements with the cable programmer before that suit was filed, says Bob Astarita, security director for Cablevision Systems Corp., which owns the Chicago station.

The piracy allegations in that case are similar to the suit filed in Baltimore by HBO.

Local Bars named

"Any commercial establishment airing an HBO event is doing so without authority," says Pescosolido, whose partner Joseph M. Fairbanks filed the suit. Fairbanks was not available for comment.

In addition to The American Sports Bar and Danny's Belair House, the programmer filed suit against local nightspots The Purple Goose Saloon, Clayton's Bar and Grill and Pebbles.

According to HBO, its satellite signal is typically scrambled to keep it from being intercepted. Local cable systems can unscramble the signal, and then retransmit it to HBO customers.

To pirate the broadcast, a commercial establishment would have to unscramble the signal after picking it up from a satellite feed to local cable networks, the suit alleged.

The signal also could be intercepted from the local cable network feed. In some cases, that could be as easy as plugging in a converter that had been installed for a residential customer, the suit says. ***WBR***